

What is claimed is:

1. An assembly comprising:

an actuator device including:

an extendable initiator cup at least in part defining a storage chamber containing a reactive charge reactable to produce reaction products, the extendable initiator cup including at least one non-random fold; and

at least one electrical connector in reaction initiating communication with the reactive charge;

the extendable initiator cup having a first length prior to reaction initiation of the reactive charge and, upon reaction initiation of the reactive charge, the extendable initiator cup longitudinally extends to a second length, where the second length is greater than the first length; and

a support housing including a longitudinally extending bore, the extendable initiator cup at least partially disposed within the bore;

wherein the support housing is effective to limit lateral expansion of the extendable initiator cup upon reaction initiation of the reactive charge.

2. The assembly of claim 1 additionally comprising a housing end stop adjacent a first end of the bore and effective to limit longitudinal extension of the extendable initiator cup upon reaction initiation of the reactive charge.

3. The assembly of claim 2 additionally comprising a cavity between the extendable initiator cup and the housing end stop, wherein, upon extending to the second length, the extendable initiator cup extends into the cavity.

4. The assembly of claim 1 wherein the extendable initiator cup includes a plurality of non-random folds.

5. The assembly of claim 4 wherein the non-random folds include corrugations.

6. The assembly of claim 1 wherein the extendable initiator cup is formed of stainless steel.

7. The assembly of claim 1 wherein the storage chamber is hermetically sealed.

8. The assembly of claim 1 wherein the reaction products include a gas.

9. The assembly of claim 1 wherein the reactive charge comprises a pyrotechnic.

10. The assembly of claim 1 wherein a difference between the first length and the second length is about 4 millimeters to about 8 millimeters.

11. The assembly of claim 2 additionally comprising an electrical conductive member at least partially disposed between the extendable initiator cup and the housing end stop.

12. A method for interrupting conduction of electricity through the electrical conductive member of the assembly of claim 12, the method comprising:

initiating reaction of the reactive charge by an electrical signal through the at least one electrical connector;

longitudinally extending the extendable initiator cup from the first length to the second length; and

disrupting the electrical conductive member with the extended extendable initiator cup.

13. The assembly of claim 11, wherein the extendable initiator cup is disposed in interrupting communication with the electrical conductive member and, upon reaction initiation of the reactive charge, the extendable initiator cup longitudinally extends from the first length to the second length to interrupt conduction of electricity through the electrical conductive member.

14. The assembly of claim 13 wherein, upon the longitudinal extension of the extendable initiator cup from the first length to the second length, the extendable initiator cup severs the electrical conductive member.

15. The assembly of claim 14 additionally comprising a non-conductive cutter disposed relative to the extendable initiator cup wherein, upon the extension of the extendable initiator cup from the first length to the second length, the cutter severs the electrical conductive member.

16. The assembly of claim 11 wherein the electrical conductive member includes an electrical switch at least partially disposed between the extendable initiator cup and the housing end stop, the extendable initiator cup is disposed in disengaging communication with the electrical switch and, upon the longitudinal extension of the extendable initiator cup from the first length to the second length, the extendable initiator cup disengages the electrical switch.

17. The assembly of claim 16 wherein the electrical switch includes a first electrical contact electrically connected to a second electrical contact and, upon the extension of the extendable initiator cup from the first length to the second length, the extendable initiator cup electrically disconnects the first and second electrical contacts.

18. The assembly of claim 16 wherein the electrical switch is an emergency power disengage switch.

19. The assembly of claim 11 wherein the electrical conductive member includes an electrical switch at least partially disposed between the extendable initiator cup and the housing end stop, wherein the extendable initiator cup of the actuator device is disposed in engaging communication with the electrical switch and, upon the longitudinal extension of the extendable initiator cup from the first length to the second length, the extendable initiator cup engages the electrical switch.

20. The assembly of claim 19 wherein the electrical switch includes a first electrical contact electrically disconnected from a second electrical contact and, upon the longitudinal extension of the extendable initiator cup from the first length to the second length, the extendable initiator cup electrically connects the first and second electrical contacts.

21. The assembly of claim 1 wherein, upon extending to the second length, the extendable initiator cup partially extends beyond a first end of the bore.

22. An assembly for interrupting conduction of electricity through an electrical conductive member, comprising:

an actuator device including:

an extendable initiator cup including at least one non-random fold and at least in part defining a storage chamber containing a reactive charge reactable to produce reaction products; and

at least one electrical connector in reaction initiating communication with the reactive charge;

the extendable initiator cup having a first length prior to reaction initiation of the reactive charge and wherein, upon reaction initiation of the reactive charge, the extendable initiator cup longitudinally extends to a second length, where the second length is greater than the first length;

a support housing including a longitudinally extending bore, the extendable initiator cup at least partially disposed within the bore;

a housing end stop connected to the support housing and adjacent a first end of the bore and effective to limit longitudinal extension of the extendable initiator cup upon reaction initiation of the reactive charge; and

an electrical conductive member at least partially disposed between the extendable initiator cup and the housing end stop;

wherein the extendable initiator cup is disposed in interrupting communication with the electrical conductive member, wherein, upon reaction

initiation of the reactive charge, the extendable initiator cup extends to the second length to interrupt conduction of electricity through the electrical conductive member.

23. The assembly of claim 22 additionally comprising a cavity between the extendable initiator cup and the housing end stop, wherein a portion of the electrical conductive member is disposed within the cavity.

24. The assembly of claim 23 wherein, upon the extension of the extendable initiator cup from the first length to the second length, the extendable initiator cup severs the electrical conductive member.

25. The assembly of claim 24 additionally comprising a non-conductive cutter disposed relative to the extendable initiator cup wherein, upon the extension of the extendable initiator cup from the first length to the second length, the cutter severs the electrical conductive member.

26. The assembly of claim 23 wherein the electrical conductive member includes an electrical switch at least partially disposed within the cavity and between the extendable initiator cup and the housing end stop, the extendable initiator cup is disposed in disengaging communication with the electrical switch and, upon

the extension of the extendable initiator cup from the first length to the second length, the extendable initiator cup disengages the electrical switch.

27. The assembly of claim 26 wherein the electrical switch includes a first electrical contact electrically connected to a second electrical contact and, upon the extension of the extendable initiator cup from the first length to the second length, the extendable initiator cup electrically disconnects the first and second electrical contacts.

28. The assembly of claim 26 wherein the electrical switch is an emergency power disengage switch.

29. The assembly of claim 26 wherein, upon extending to the second length, the extendable initiator cup partially extends into the cavity

30. The assembly of claim 22 wherein the extendable initiator cup includes a plurality of non-random folds.

31. The assembly of claim 30 wherein the non-random folds include corrugations.



32. A method for disengaging an electrical switch using the assembly of claim 22, the method comprising:

initiating reaction of the reactive charge by an electrical signal through the at least one electrical connector;

longitudinally extending the extendable initiator cup from the first length to the second length; and

disengaging the electrical switch with the extended extendable initiator cup.